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ABSTRACT

"A method for forming a DMOS device and a DMOS device"

A method for forming an LDNMOS (1) and LDPMOS (2) in a CMOS process
5 comprises forming the LDNMOS (1) and LDPMOS (2) to a stage where a gate (14)
is laid down on a gate oxide layer (12) and a locos (9) is formed over the respective
N and P-wells (4) and (5) of the LDNMOS (1) and LDPMOS (2). A P-body (15) is
formed in the N-well (4) of the LDNMOS (1) by implanting a boron dopant in two
stages, in the first stage at a first tilt angle (θ) of 45° for forming the P-body (15)
10 beneath the gate (14) for determining the source/drain threshold voltage, and
subsequently at a second tilt angle (Φ) of 7° for extending the P-body (15)
downwardly at (25) for determining the punchthrough breakdown voltage of the
LDNMOS (1). The formation of an N-body (16) in a P-well (5) of the LDPMOS (2) is
similar to the formation of the P-body (15) with the exception that the dopant is a
15 phosphorous dopant.